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(54) Detachable Semi-Rigid Protective Sleeve for
Goaltender's Hockey Sticks

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No. OF CLAIMS 17

Canada

DETACHABLE SEMI-RIGID PROTECTIVE SLEEVE FOR GOALTENDER'S
HOCKEY STICKS

ABSTRACT OF THE DISCLOSURE

5 A detachable sleeve or sock is formed from a
semi-rigid material such as plastic or glass fibre im-
pregnated with resin. It is open at the upper edge to
enable it to be spread slightly for engagement over the
blade and part of the handle of the stick whereupon it
can be taped in position for hockey practice and/or pre-
10 game warmup, but can be removed for the actual hockey
game.

DETACHABLE SEMI-RIGID PROTECTIVE SLEEVE FOR GOALTENDERS'
HOCKEY STICKS

BACKGROUND OF THE INVENTION

5 The present invention relates to new and useful
improvements in detachable protective devices for goalten-
ders' hockey sticks.

Goaltending hockey sticks are relatively expen-
sive and while this may not be a factor in professional
hockey, it constitutes a considerable expense for amateur
10 and semi-professional hockey clubs.

Goaltending sticks are not used extensively dur-
ing the game because only a relatively small number of shots
are made on goal, but during practice, the sticks are in
use all of the time and often become damaged, resulting in
15 a requirement for many sticks during the hockey season.

Previous patents attempt to reinforce the stick
by means of permanent attachments to the blade thereof and
examples include U.S. Patent 4,148,482 which teaches a tex-
tile tubing slipped over the blade after which a resinous
20 coat is applied over the tubing incorporating it permanent-
ly to the blade.

U.S. Patent 4,172,594 shows a hockey stick blade
which is reinforced with glass fibre and impregnated with
a resin plastic, once again becoming a permanent part of



the blade.

U.S. Patent 3,353,826 discloses a reinforced hockey stick blade which is covered with a soft fibreglass yarn knitted with a very fine filament which is then covered with a layer of synthetic resin, once again becoming a permanent part of the stick.

U.S. Patent 2,912,245 illustrates a hockey stick blade which is covered with a sleeve which is fabricated integrally with the blade.

All of these, while reinforcing the blade, form part of the actual manufacture of the stick and if they become damaged, they require complete replacement.

SUMMARY OF THE INVENTION

The present invention overcomes these disadvantages by providing a semi-rigid protective sleeve for detachable securement to a goaltender's hockey stick blade and consists of a relatively tight fitting sleeve engageable over the blade, heel and part of the handle of the stick and means to detachably secure the sleeve in position.

This means that the sleeve can be used to protect the goaltender's hockey stick during practice or pre-game warmup periods yet can be removed, if necessary, for actual play.

Another advantage of the invention is that the

sleeve can be used on cracked or slightly damaged sticks for practice thereby eliminating further damage or breakage occurring and preventing parts of the blade from perhaps breaking off and damaging other players.

5 A further advantage of the invention is that the sleeves can be formed or bent in the desirable curvature to suit the goaltender's blade and can be manufactured to suit blades and handles of the various lies.

10 One embodiment of the invention shows a structure which can be used for right-handed sticks with an opposite handed structure being used for left-handed sticks. Another embodiment shows what might be termed a universal sleeve which can be used on left or right-handed sticks.

15 Finally, a further advantage of the invention is to provide a device which is simple in construction, economical in manufacture and otherwise well suited to the purpose for which it is designed.

20 With the foregoing in view, and other advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, the invention is herein described by reference to the accompanying drawings forming a part hereof, which includes a description of the best mode known to the applicant and of the preferred typical embodiment of the principles of the

present invention, in which:

DESCRIPTION OF THE DRAWINGS

Figure 1 is a fragmentary side elevation of a
goaltender's stick with one embodiment of the invention
5 in situ.

Figure 2 is a rear view of Figure 1.

Figure 3 is a front elevation of Figure 1.

Figure 4 is a view similar to Figure 3, but show-
ing a universal left and righthanded embodiment in situ.

10 Figure 5 is an isometric view of the sleeve of
Figures 1 and 2.

Figure 6 is a top plan view of an embodiment show-
ing the blade engaging portion arcuately curved.

Figure 7 is a fragmentary front elevation of the
15 heel portion of the sleeve showing a reinforcement locat-
ed at this point.

Figure 8 is a cross sectional view substantially
along the line 8-8 of Figures 7 and 9.

Figure 9 is a view similar to Figure 7, but show-
20 ing the reinforcement extending along the base of the
blade portion of the device.

Figure 10 is a view similar to Figure 5 and show-
ing an alternative embodiment.

Figure 11 is a view similar to Figure 5 but

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showing an alternative embodiment.

Figure 12 is a cross sectional view similar to Figure 8 but showing an alternative embodiment.

5 Figure 13 is an end view of a further modification of the design.

In the drawings like characters of reference indicate corresponding parts in the different figures.

DETAILED DESCRIPTION

10 Proceeding therefore to describe the invention in detail, reference should first be made to Figure 5 in which reference character 10 illustrates the invention.

15 It consists of a semi-rigid sleeve formed from synthetic plastic moulded to the configuration or from glass fibre cloth impregnated with resin and formed in the configuration illustrated. Other material such as metal may be used.

20 It is designed to be engaged over a goaltender's hockey stick collectively designated 14 which includes a handle portion 15, a heel portion 16 and a blade portion 17.

The sleeve 10 is designed to be a relatively close fit over the blade, heel and a portion of the handle of the stick and may be detachably secured in position by means such as the conventional tape wrapped around the

stick and the sleeve and illustrated in Figure 1 by reference character 18.

5 The sleeve includes a blade engaging portion 11, a heel engaging portion 12 and a handle engaging portion 13 and in the embodiment shown in Figures 1 and 2, the blade engaging portion 11 includes a pair of spaced apart planar side panels 19 and 20 joined across the lower edges thereof by means of a base panel 21 with the side panels converging towards one another as clearly shown in Figure 5
10 thus enabling them to be sprung apart slightly for engage-

ment over the portion of the stick and blade and to grip same relatively snugly.

In the embodiment shown in Figures 1, 2 and 5, the side panel 19 engages the front face 22 of the blade and the side panel 20 engages the rear face 23 thereof with the base 21 engaging the base 24 of the blade portion 17.

It will be noted that the depth of the panel 19 is such that it terminates adjacent the upper edge 25 of the front face of the blade whereas the depth of the panel 20 terminates spaced below the upper edge 26 of the rear face of the blade. This enables full protection to be given to the front face of the blade, which of course is the operating face and the exposed strip 28 together with the upper edge 29 of the blade, enables the securing tape 18 to adhere to the blade thus assisting in holding the sleeve firmly in position and preventing any relative movement from occurring. This difference in heights of the two faces continues around the heel portion 16 and along the handle 15 terminating at a location indicated by reference character 30. However, it will be appreciated that the handle engaging portion may extend as far along the handle as desired.

Figure 3 will also show the preferred direction of the wrapping of the tape 18 indicated by arrows 18A.

It will also be appreciated that the stick shown in Figures 1, 2 and 3 is a right-handed stick and that the reverse situation will apply to left-handed sticks insofar as the faces and panels are concerned with the tape wrapping also being opposite to that shown in Figure 3.

Figure 4 shows what might be termed a universal sleeve in which the side panels 19A and 20A are the same depth and terminate adjacent the upper edges 25 and 26 of the blade portion 17. This can be used on a right or left-handed goaltender's stick with the taping preferably following the direction indicated in Figure 3 or the opposite direction if used on a left-handed stick.

It will also be appreciated that the sleeves can be manufactured in different lies to suit the lie of the stick and that, if desired, the blade portion 11 may be arcuately curved as shown in Figure 6, in either direction and to the degree required, depending upon the construction of the stick blade. With certain plastics, this arcuate curve may be formed after manufacture by steam heating in a manner similar to the curving of the blades of hockey sticks.

Figures 7, 8 and 9 show a reinforcement strip 31 embedded within the base 32 of the heel portion 12 of the sleeve. This can be formed from a thin metal insert

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which may be curved to follow the contour of the base of the heel and, if desired, this metal insert may be extended forwardly along the base 21 of the blade portion as indicated by reference character 31A in Figure 9.

5 This reinforces the underside of the sleeve which is a part which takes considerable impact and wear when in use.

10 Although the embodiment is illustrated and described, with the engagement opening being formed along the upper edge between the edges of the two side panels, nevertheless it will be appreciated that other constructions can be utilized to facilitate the engagement and disengagement of the sleeve with the blade, heel and part of the handle portion of a goaltender's hockey stick.

15 Furthermore, other forms of detachable securement can be provided such as clips, ties and the like.

20 Figures 10, 11 and 12 show alternate embodiments. Figure 10 which is similar to the embodiment in Figure 5, shows a closed front end 33 extending across the front edges of the side panels 19 and 20 and also engaging with the front of the base 24. This can be moulded in one piece and protects the end of the stick.

Figure 11 shows a somewhat similar embodiment

in which the side panels 19 and 20 extend to just above the upper edge of the stick and having a top plate 34 formed thereon enclosing the entire front portion of the sleeve and leaving the rear part open from the heel portion 12 to the upper end of the handle engaging portion, so that the stick is then inserted at the rear through the entrance or open rear and upper portion 35.

It is preferable that the inner surfaces of the side panels 19 and 20 be coated or provided with a resilient foam like material 36 which may be formed from sheet foam or the like and adhesively secured to the inner surfaces or alternatively, may be sprayed upon these inner surfaces. This assists in maintaining the sleeve snugly upon the blade as well as absorbing the shock of the puck striking the sleeve and reducing considerably any noise or rattle which might occur when in use. Any such material may be used to accomplish these advantages.

Although in some embodiments the sleeve is taped into position, this may not be necessary particularly with the embodiment shown, for example, in Figure 11 or if the sleeve fits tightly enough when engaged upon the blade, heel and handle.

The sleeve of any of the embodiments may be made by injection moulding, vacuum forming or ultrasonic

or vibrational welding of sheets of material or any other preferred method of construction such as casting in a mould or the like.

5 Also the metal reinforcement 31 and 31A can consist of a strip of tougher plastic or other substance embedded within the sole or base of the sleeve, or the sleeve itself may be manufactured from a tougher material with the sides and remaining parts of the sleeve being secured to the base by conventional means.

10 It should be understood that the various embodiments or additions such as the padding 36, reinforcing material 31 and 31A, the end 33 and the upper portion 34 may all be interchanged with the various embodiments shown.

15 It should also be noted that the stick engaging portion may be cut down, if desired, when being fitted to the stick in the first instance, if this is desirable.

In Figure 11, the upper edges of the side walls of the handle engaging portion 13 are chamfered or tapered inwardly as at 13A to relieve or eliminate the step or
20 shoulder at this point. This is an optional construction which can be used in any of the embodiments.

It should be noted that one or both sides of the sleeve in any of the embodiments disclosed may be perforated or formed in an open mesh configuration, if desired,

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in order to reduce the weight of the protection device. An example is shown partially in Figure 5 insofar as the apertures are concerned or in Figure 7 showing an open mesh portion.

5 Figure 13 shows a view similar to Figure 3 but with the rear face 30 terminating approximately half way and having a tapered upper edge 37. This embodiment also may have an apertured or mesh formation over all or part of either of the sides 19 or 20.

10 DRAWINGS SUPPORTED BY THE SUPPLEMENTARY DISCLOSURE

 Figure 14 is a side elevation of the preferred embodiment with the sleeve shown with the maximum lie.

 Figure 15 is a view similar to Figure 14 but showing the sleeve adjacent the minimum lie.

15 Figure 16 is a view similar to Figure 15 but showing an alternative embodiment with the sleeve being shown with the minimum lie.

 Figure 17 is a view similar to Figure 16 but showing the sleeve approaching the maximum lie.

20 Figure 18 is a view along the line 17-17 of Figure 14.

 Figure 19 is a view similar to Figure 18, but showing an alternative embodiment.

25 Figure 20 is the same as Figure 18 but showing a yet further embodiment.

 In accordance with the preferred aspect of the in-

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vention, there is provided a semi-rigid protective sleeve for detachable securement to a goaltender's hockey stick comprising in relatively tight fitting sleeve engaging over the blade, heel and part of the handle stick, means to detachably secure said sleeve in position and means to adjust the lie of the sleeve to the lie of the stick.

Figures 14 through 20 show the preferred embodiment in which one sleeve is adapted for use with sticks having different lies. The lie of a stick is the relationship of the angle between the longitudinal axis of the blade and the longitudinal axis of the handle and the closer this relationship is to 90 , the greater the lie. Conversely, the shallower the angle, the lower the lie.

Such lies are given numbers with the maximum lie being approximately 15 and the minimum lie being approximately 11.

The sleeves of the preferred embodiment are shown as having side panels 19 and 20 of equal height and with no front portion 33, but of course any of the embodiments hereinbefore described can be used in forming a sleeve with an adjustable lie.

The adjustment of the lie is provided by means of a slit 37 formed through both side panels 19 and 20 and situated between the portions 38 of the side panels engaging the blade of the stick and the portions 39 of the side panels embracing the handle of the stick. This slit ex-

tends from the upper edges 40 of the side panel portions 38 and 39 to adjacent the base of the base 41 of the heel portion 13 so that the two portions 38 and 39 may hinge transversely, within limits, from a position, for example, shown in Figure 14 to a position approaching the minimum lie shown in Figure 15, it being understood that the slit is defined by the adjacent edges 42 and 43 of the portions 38 and 39 respectively.

Means are provided to facilitate this hinging action between the portions and Figures 14 through 18 show the preferred method. A small aperture or hole 44 is formed one upon either side of the base 21 and adjacent the lower end of the slits 37.

Figure 19 shows an alternative embodiment in which a line of weakness 45 extends between the lower ends of the slits across the base of the heel.

Figure 20 shows a living hinge 46 extending between the lower ends of the slits 37 and across the base of the heel.

In Figures 14 and 15 which show the preferred construction, the edges 42 and 43 are contiguous when the sleeve is engaged over a stick having a maximum lie. As the lie of the stick decreases, these edges move apart so that they diverge from the lower end thereof forming a V-shaped gap as clearly shown in Figure 14.

In Figures 16 and 17, an alternative method is

shown with the edges 42 and 43 being contiguous when the sleeve is engaged over the stick having a minimum lie. As the lie is increased, one edge either 42 or 43 of each of the relevant side portions overlaps the other edge as clearly shown in Figure 17.

In all cases, the sleeves may be secured by taping as hereinbefore described, may have reinforcement strips 31 as shown in the other embodiments and may have the cushioning material or padding 36, depending upon design requirements.

Since various modifications can be made in my invention as hereinbefore described, and many apparently widely different embodiments of same made within the spirit and scope of the claims without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

CLAIMS:

(1) A protective device for a goaltender hockey stick of the type having a handle and a blade, the blade including a ice engaging portion and an upstanding portion
5 connected to the handle and arranged at an angle to the ice engaging portion defining a heel therebetween, the device comprising a channel member formed from a flexible sheet material defining a base, an upstanding front panel and an upstanding rear panel, said front panel being configured to
10 substantially cover said ice engaging portion and part of said upstanding portion of said blade, whereby said channel member can be slipped over said stick to a position in which said base is in engagement with an edge of the blade.

15 (2) The device according to Claim 1 in which said front and rear panels incline upwardly and inwardly towards one another and incorporating inherent resiliency to enable said sleeve to be engaged over said stick portions.

20 (3) The device according to Claim 1 in which the depth of said front panel extends substantially the full depth of the blade and the depth of said rear panel is such that it terminates at a position spaced downwardly from the upper edge of said blade when said sleeve is
25 in place upon said hockey stick.

(4) The device according to Claim 1 in which

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the depth of both of said front and rear panels extends substantially the full depth of said blade so as to terminate adjacent the upper edge of said blade when in situ.

5 (5) The device according to Claim 1 in which said base is arcuately curved from the front end towards said heel portion.

(6) The device according to Claim 1 which includes a reinforcement means on the base.

10 (7) The device according to Claim 2 which includes a reinforcement means on the base.

(8) The device according to Claim 3 which includes a reinforcement means on the base.

(9) The device according to Claim 4 which includes a reinforcement means on the base.

15 (10) The device according to Claim 5, 6 or 7 in which said reinforcement means extends along the base for substantially the full length thereof.

20 (11) The sleeve according to Claim 1, 2 or 3 which includes a resilient material secured to the inner faces of said front and rear panels to assist in retaining said member in position upon said stick and to cushion said member and said stick against impact forces upon said member.

25 (12) The sleeve according to Claim 4, 5 or 6 which includes a resilient material secured to the inner faces of said front and rear panels to assist in retain-

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ing said member in position upon said stick and to cushion said member and said stick against impact forces upon said member.

5 (13) The sleeve according to Claim 1, 2 or 3 in which at least a portion of said rear panel is multi-apertured in order to reduce the weight of said member.

10 (14) The sleeve according to Claim 4, 5 or 6 which includes at least a portion of at least one of said side panels being multi-apertured in order to reduce the weight of said sleeve.

CLAIMS SUPPORTED BY THE SUPPLEMENTARY DISCLOSURE

15 (15) The device according to Claim 1, 2 or 3 in which said front and rear panels include slot means arranged to extend from a position adjacent said heel to an upper edge of the respective panel whereby said panels can be adjusted at said slot means to accommodate the angle between said ice engaging portion and said upstanding portion.

20 (16) The device according to Claim 1, 2 or 3 in which said front and rear panels include slot means arranged to extend from a position adjacent said heel to an upper edge of the respective panel whereby said panels can be adjusted at said slot means to accommodate the angle between said ice engaging portion and said upstanding portion, wherein said slot means is substantially
25 V-shaped defining edges thereof whereby when separated

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from said stick the base of the channel member is substantially straight and when attached to said stick said edges of said V-shaped slots are substantially touching when used with a stick having the smallest angle between the upstanding portion and the ice engaging portion.

5 (17) The device according to Claim 1, 2 or 3 in which said front and rear panels include slot means arranged to extend from a position adjacent said heel to an upper edge of the respective panel whereby said panels can be adjusted at said slot means to accommodate 10 the angle between said ice engaging portion and said upstanding portion, wherein said slot means is substantially V-shaped defining edges thereof whereby when separated from said stick the base of the channel member is substantially straight and when attached to said stick said 15 edges of said V-shaped slots are substantially touching when used with a stick having the smallest angle between the upstanding portion and the ice engaging portion, wherein the slot means is a circular opening at the apex 20 of the V-shape.

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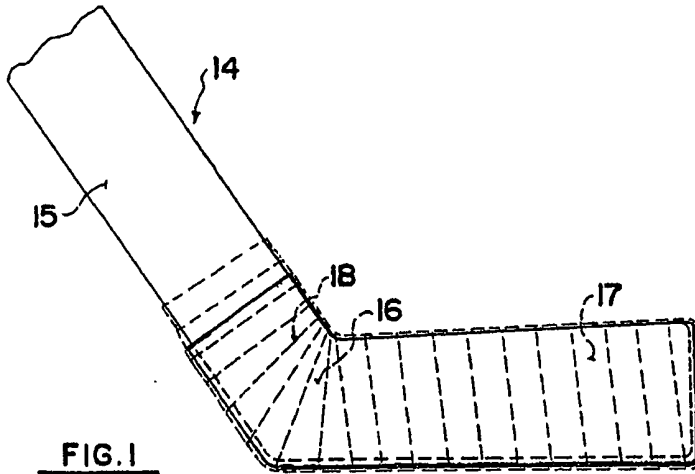


FIG. 1

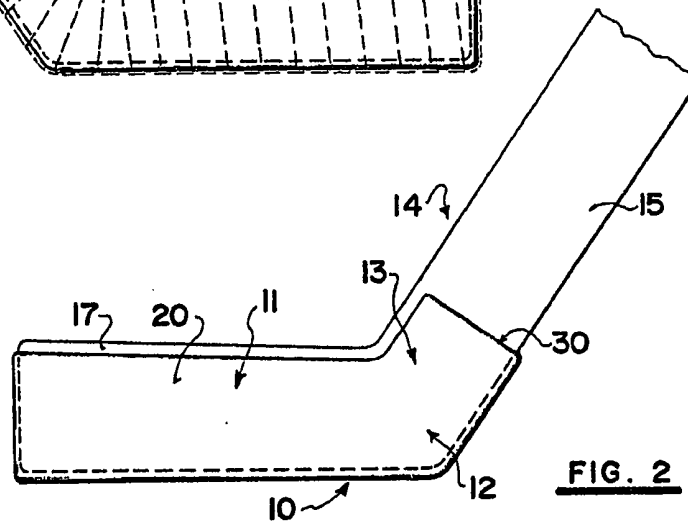


FIG. 2

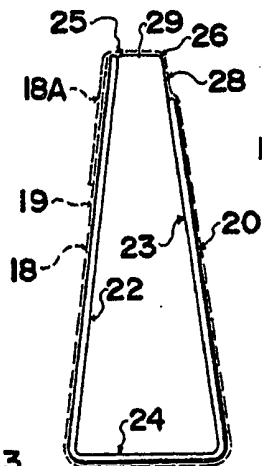


FIG. 3

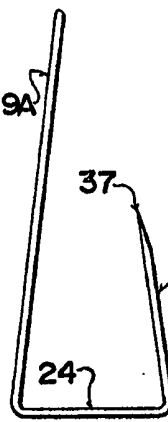


FIG. 13

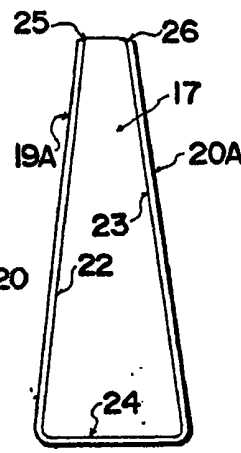


FIG. 4

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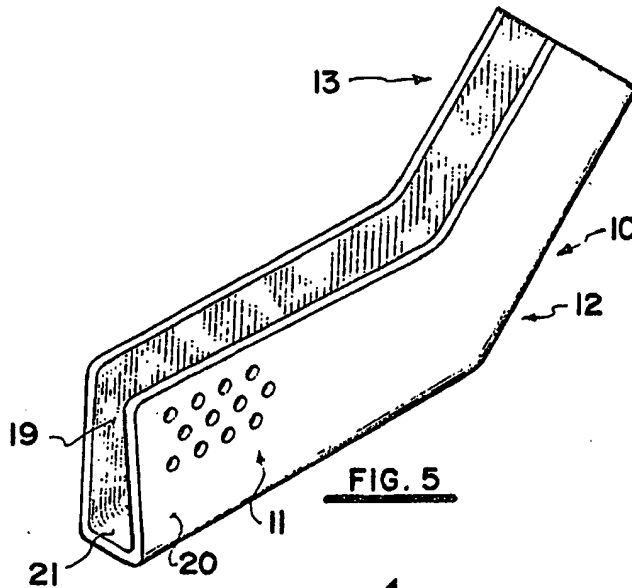


FIG. 5

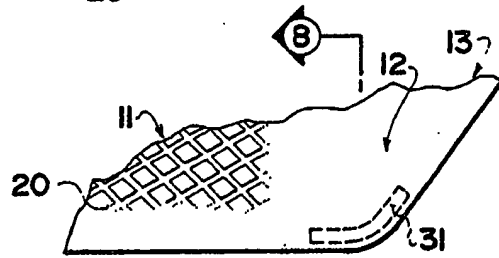


FIG. 7

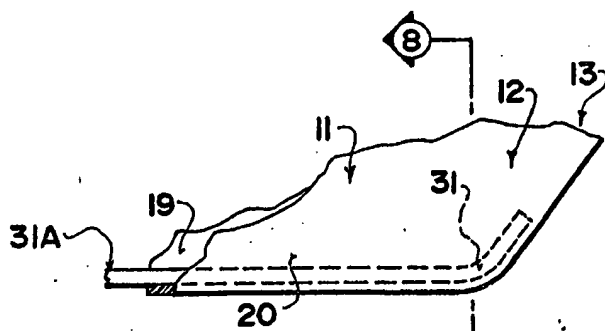


FIG. 9

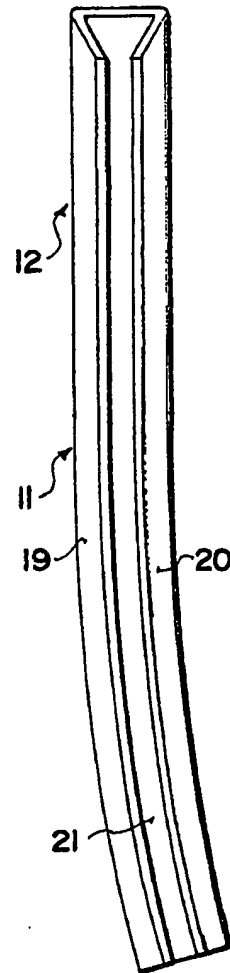


FIG. 6

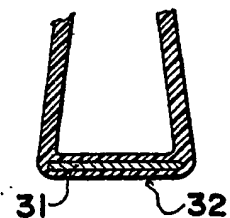


FIG. 8

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By: *Ade & Company*

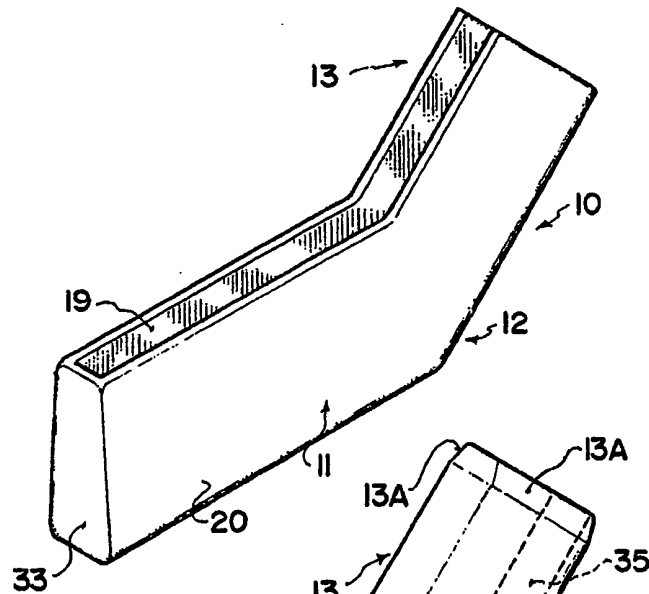


FIG. 10

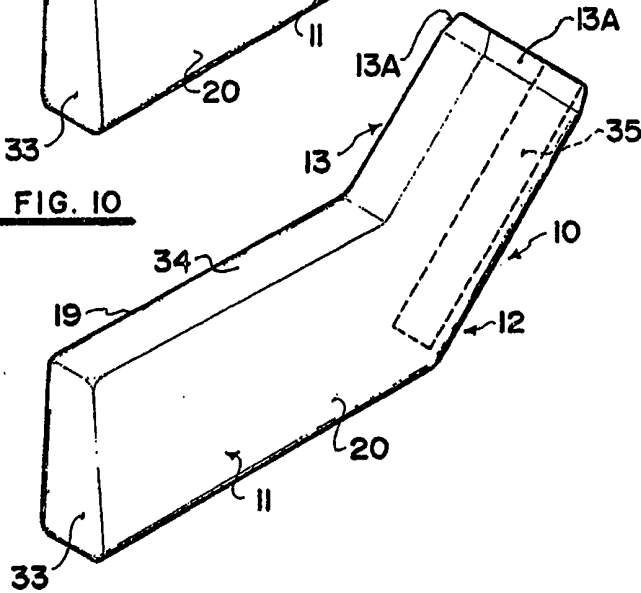


FIG. 11

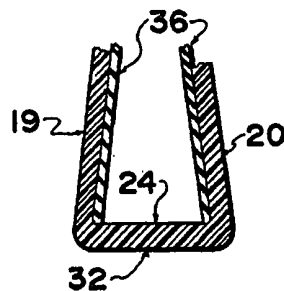


FIG. 12

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By: *Adair & Company*

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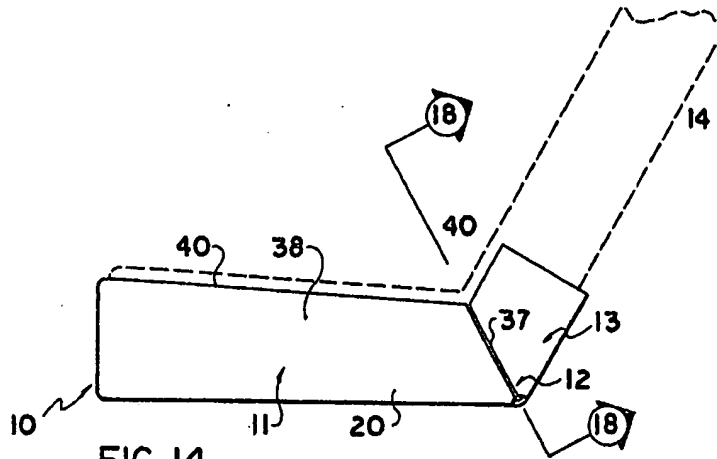


FIG. 14

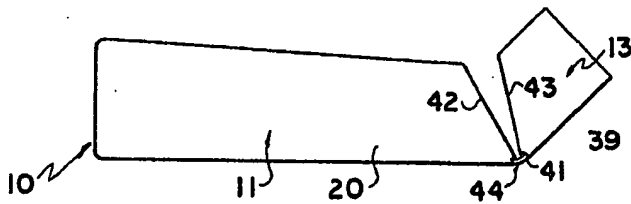


FIG. 15

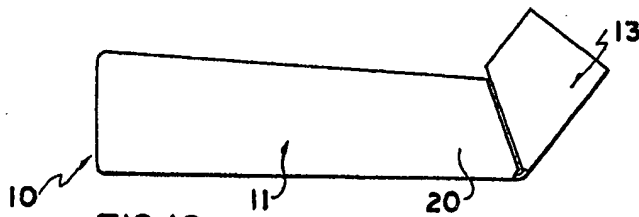


FIG. 16

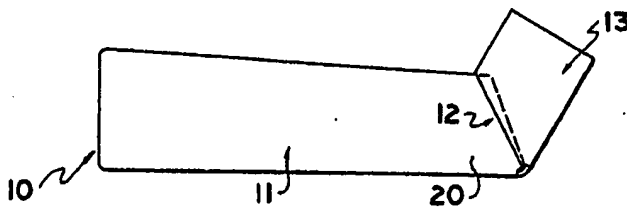


FIG. 17

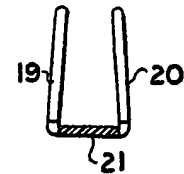


FIG. 18

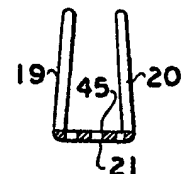


FIG. 19

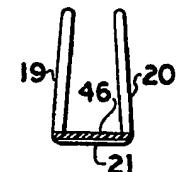


FIG. 20

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BY:

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